

Claims

1. A device for supplying preconditioned air to an aircraft on the ground, comprising:
 - a compressed air inlet;
 - a compressed air hose having a first end connected to said compressed air inlet and an opposite second end for connection to a remote, ground-based, compressed air unit;
 - expander means downstream of said compressed air inlet for allowing said compressed air to expand to lower pressure and temperature;
 - an ambient air inlet;
 - 10 a mixing chamber downstream of said expander means and communicating with said ambient air inlet, wherein mixing of ambient air with the expanded, cold air is controlled in such a way as to elaborate preconditioned air at the desired temperature;
 - a connection hose having a first end in communication with said mixing chamber and a second end to be connected to an aircraft on the ground.
- 15 2. The device according to claim 1, comprising flow control means upstream of said connection hose for providing a desired flow of preconditioned air through said connection hose.
3. The device according to claim 2, wherein said flow control means comprises
- 20 a centrifugal blower or an ejector.
4. The device according to any one of the preceding claims, wherein said expander means is one of a turbine expander, a rotary screw expander and a displacement expander.
5. The device according to the preceding claim, comprising an electric generator or an ambient air compressor coupled to said expander means.
- 25 6. The device according to the preceding claim, wherein said ambient air

- compressor has an outlet connected to said expander means.
7. The device according to any one of the preceding claims, wherein said device comprises a rolling support.
 8. The device according to any one of the preceding claims, comprising
 - 5 two compressed air hoses having each a first end connected to a compressed air inlet and an opposite second end for connection to said ground-based, compressed air unit; and
 - two rotatable reel for winding and unwinding said compressed air hoses.
 9. The device according to claim 8, comprising an electric, hydraulic or
 - 10 pneumatic motor coupled to each rotatable reel via a gearbox.
 10. The device according to any one of the preceding claims, comprising an air filter downstream of said ambient air inlet.
 11. The device according to any one of the preceding claims, wherein said expander means opens into an expansion chamber.
 - 15 12. The device according to the preceding claim, wherein said expander means and said expansion chamber are mounted in an insulated casing.